Summary and Synopsis

Suggested Implementation Timelines:

Approve Exclusive Use Helitack only to ride on Type 1 helicopters with the current completed mitigations and those that will be completed within two weeks after Map begins.
Priority

NA – Not Applicable due to unavailable for Type I's or already a contract specification
Low – Nice to do but not necessary
Mod – Beneficial to do
High – Needs to be done

Priority	ID	Mitigation	Effect	Cost
N/A	A5M2	Wire Strike Kits	Type 1 Only	No Cost
N/A	A7M1	Application of Appropriate Standards Regardless of Helicopter Type	All Helicopters	No Cost
N/A	A4M1	Utilize FAA Standards for Storage Restraint Systems	Type 1 Only	No Cost
Low	PG12M1	Limited CRM	Type 1 Only	No Cost
Low	A2M1	Standardized Interior Configuration	Type 1 Only	No Cost
Low	A2M2	Original Equipment Manufacturer Stairs, Railings, and Handholds	Type 1 Only	No Cost
Low	A2M3	Transporting Personnel in Type 1 Ingress & Egress Addition to Existing Training Courses When Updated	Type 1 Only	No Cost
Low	PG1M1	Identify Standard Door Configuration	Type 1 Only	No Cost
Low	PG1M2	Manager Briefing with Pilot on Mission Profile	All Helicopters	No Cost
Low	PG6M1	Ensure Ground Personnel are Outside Safety Circle when Landing	All Helicopters	No Cost
Low	PC3M1	Require PIC & SIC to Attend CRM Training	Type 1 Only	No Cost
Mod	PC4M1	Aviation Audit of Operators Background in Performing Personnel Movement	Type 1 Only	No Cost
High	A6M1	Emergency Notification System	Type 1 Only	No Cost
High	A1M1	Ingress and Egress Difficulty Issues	Type 1 Only	No Cost
High	PC1M1	Center of Gravity Calculations	All Helicopters	No Cost
High	PG7M1	Helicopter Manager & HIP Brief w/ Vendor on Mission Shift	Type 1 Only	No Cost
Aircraft and Contractor			Total Cost	$0

Approve personnel transport after 30 day period or all completed mitigations are achieved for the 2009 field season.

Priority	ID	Mitigation	Effect	Cost
Low	PG4M1	Develop and incorporate an Electronic Load Calculation	All Helicopters	$10,000
Mod	PG5M1	Arrival & Departure Path	Type 1 Only	$500
High	A5M1	Bubble Windows	Type 1 Only	$20,000
High	PG3M1	Standardized Procedure Evaluating Type 1 Helicopter pilots	Type 1 Only	See PC2M1
High	A3M1	Substantiation of all Personnel Seats	All Helicopters	$30,000
High	PG11M1	Helicopter Practical Test Standards Pertaining to Type 1 Troop Hauling	Type 1 Only	See PC2M1
High	PC2M1	Work with Interagency Partners on Helicopter Practical Test Standards	Type 1 Only	$2,000
Aircraft and Contractor		Total Cost		$62,500

All other mitigations need to be accomplished prior to the 2010 field season or major headway made.

Priority	ID	Mitigation	Effect	Cost
Low	PG12M2	Require 16 Hour CRM Course for Managers	Type 1 Only	$9,000
Low	PG4M2	Place the Electronic Load Calculation on the IAT Website	All Helicopters	$5,000
Mod	PG8M1	Develop Training Courses for Operations Personnel	All Helicopters	$20,000
Mod	PG8M2	Staffing Exclusive Use Crews appropriately for advanced aviation Mgmt Skills	All Helicopters	$500,000
Mod	PG8M3	Require IMT's to have Aviation Management positions	All Helicopters	$20,000
Mod	O1M1	Lack of Aviation Positions on IMT's Require Ops Attend Aviation Courses	All Helicopters	See PG8M1
High	PG9M1	AMI Positions Needed	Type 1 Only	$1.75M
High	PG2M1	Training and Mentoring of AMI's	Type 1 Only	$100,000
High	PG10M1	HIP Positions Needed	All Helicopters	$900,000
High	O2M1	Implement Evaluation Process for Type 1 Helicopters	All Helicopters	$100,000
High	O2M2	Implement Program Support Personnel	All Helicopters	See PG8M2
High	O2M3	Establish an Adequate Budget for Implementation	All Helicopters	$3,404,000
Program Management		Total Overall Cost		$3,466,500

Aircraft System

Subsystems:

Configuration –	4 Hazards – 6 Mitigations
Visibility –	1 Hazard – 2 Mitigations
Communications –	1 Hazard – 1 Mitigation
Policy –	1 Hazard – 1 Mitigation

Personnel Government System

Subsystems:

Configuration –	1 Hazard – 2 Mitigations
Training –	3 Hazards – 4 Mitigations
Environment –	2 Hazards – 2 Mitigations
Mission –	1 Hazard – 1 Mitigation
Management –	3 Hazards – 5 Mitigations
Inspection –	1 Hazard – 1 Mitigation
CRM –	1 Hazard – 2 Mitigations

Personnel Contractor System

Subsystems:

Configuration –	1 Hazard – 1 Mitigation
Mission –	1 Hazard – 1 Mitigation
CRM –	1 Hazard – 1 Mitigation
Capability –	1 Hazard – 1 Mitigation

Operations System

Subsystem:

Management –	2 Hazards – 4 Mitigations

Total – 25 Hazards
35 Mitigations

Currently completed mitigations –
PG12M1, A6M1, A1M1, PC1M1, PC4M1, A7M1, A4M1, A5M2, A2M1, A2M2, A2M3, PG1M1, PG1M2, PG6M1, PC3M1

Item to be completed two weeks or sooner after MAP begins –
PG7M1

Mitigations to be completed in 30 days or less –
PG5M1, A5M1, PG3M1, A3M1, PG11M1, PC2M1, PG4M1

Mitigations to be completed in 1 year or more –
PG12M2, O2M1, O2M2, O2M3, PG8M1, PG8M2, PG8M3, O1M1, PG9M1, PG2M1, PG10M1, PG4M2

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Serious

Aircraft System A5 HAZARD: Limited visibility exists from inside the cabin which restricts the ability of the Helicopter Manager to assist in identifying external hazards.

A5M2 Mitigation: Wire strike kits will be required if available.

Action Plan:

- S61's currently on contract do not have wire strike kits as they are not available for this model.

Timeline to Complete: Not Applicable

Cost: $ No Cost Anticipated

Applies to: Type I Helicopters

Priority: *Low*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: High

Aircraft System A7 HAZARD: The loss of 19 passengers from an accident on a single flight in a Type I Helicopter is perceived to be a greater hazard than the loss of a lesser number of passengers in a Type II or Type III Helicopter

A7M1 Mitigation: Apply appropriate standards regardless of the type and certification standards of the helicopter.

Action Plan:

- The number of personnel will be determined by the performance of the aircraft.
- Forest Service Policy directs that we will not exceed the performance of the aircraft capability.

Timeline to Complete: Current contracts awarded at 9 or less passengers

Cost: No Costs Anticipated

Applies to: Type 1, Type II and Type III Helicopters

Priority: *Completed*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Aircraft System A4 HAZARD: Non-standardized storage of interior cargo including provisions for approved storage methods of boxes, nets and restraints.

A4M1 Mitigation: The agency should utilize FAA standards for a restraint system. The agency should develop a location schematic and size standards by model and type.

Action Plan:

- S61's currently on contract have the same cargo restraint system, seatbelt latching mechanism and seat layout configuration.

Timeline to Complete: Completed for current Type I contracts.

Cost: No Costs Anticipated

Applies to: Type 1 Helicopters

Priority: *Completed*

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Serious

Personnel Government PG12 HAZARD: There is a limited ability for crew resource management (CRM) to occur due to the placement of interior walls in all Type I Helicopters.

PG12M1 Mitigation: The agency should establish the capability to permit mobility of helicopter managers while in flight in Type 1 helicopters leading to improved crew resource management.

Action Plan:

- This has been mitigated with the inclusion of bubble windows, standardized avionics, and CRM required training for pilots and managers.

Timeline to Complete: Completed for current Type I contracts.

Cost: $ No cost Anticipated

Applies to: Type I Helicopters

Priority: *Low*

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Serious

Aircraft System A2 HAZARD: Ingress and Egress into aircraft is complicated. The Management and logistics are more complex dealing with more people and a non-standard seating arrangement.

A2M1 Mitigation: Identify and implement a standardized interior configuration including seat numbers and seat general location by aircraft model and type

Action Plan:

- This has been mitigated with the meeting April 16 & 17 that was inclusive of all three Type I Vendors. All three aircraft are S-61s, configured with the same seat types, restraints, and in the same general location of the platform

Timeline to Complete: Completed for current Type I contracts.

Cost: $ No cost Anticipated

Applies to: Type I Helicopters

Priority: *Low*

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Serious

Aircraft System A2 HAZARD: Ingress and Egress into aircraft is complicated. The Management and logistics are more complex dealing with more people and a non-standard seating arrangement.

A2M2 Mitigation: Ingress and egress should be facilitated by railings, handholds, stairs with defined step height etc. For each aircraft type, a cabin safety analysis will be done to define the measures and actions needed for personnel to ingress and egress the helicopter. Require an Original Equipment Manufacturer (OEM) passenger loading measures like air-stairs or a ramp on all Type 1 personnel transport helicopters.

Action Plan:

- The S-61s all have air-stairs for ingress and egress of personnel.

Timeline to Complete: Completed for current Type I contracts.

Cost: $ No cost Anticipated

Applies to: Type I Helicopters

Priority: *Low*

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Serious

Aircraft System A2 HAZARD: Ingress and Egress into aircraft is complicated. The Management and logistics are more complex dealing with more people and a non-standard seating arrangement.

A2M3 Mitigation: Address personnel transportation ingress and egress for Type 1 helicopters in the following training: Helicopter Crewperson, Helicopter Manager, Helibase Manager, Air Support, Air Operations, S-270 (Basic Air Operations) etc.

Action Plan:

- These courses are on a timeline for review and updates of the curriculum. As they come up for re-write, Type 1 personnel transport will be included.
- Brochures will be developed that will be provided to all personnel on incidents and be included in the handouts for all above listed courses.

Timeline to Complete: Completed for current Type I contracts.

Cost: $ No cost Anticipated

Applies to: Type I Helicopters

Priority: *Low*

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Medium

Personnel Government PG1 HAZARD: The ingress and egress into aircraft is complex due to the multiple different configurations of doors and stairs.

PG1M1 Mitigation: The agency should require and Original Equipment Manufacturer (OEM) passenger loading measures like air-stairs or a ramp on all Type 1 personnel transport helicopters. Identify a standardized door configuration by make and model.

Action Plan:

- All three aircraft are S-61's with the same air-stairs and door configuration.

Timeline to Complete: Completed for current Type I contracts.

Cost: $ No cost Anticipated

Applies to: Type I Helicopters

Priority: *Low*

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Serious

Personnel Government PG1 HAZARD: The ingress and egress into aircraft is complex due to the multiple different configurations of doors and stairs.

PG1M2 Mitigation: The Helicopter Manager will review the mission requirements and brief the pilot(s) on the mission profile and planning.

Action Plan:

- Managers currently perform these briefings on a daily and mission basis.
- Managers and HIPs will discuss the different mission parameters when carding of the pilot.
- Pilots are currently required to complete on-line Tactics, Fire Behavior, ICS, Fire Organizations, Terminology, Fire Traffic Areas (FTA), Contract Administration, Communications and more training per contract specification.

Timeline to Complete: Completed for current Type I contracts.

Cost: $ No cost Anticipated

Applies to: Type I Helicopters

Priority: *Low*

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Medium

Personnel Government PG6 HAZARD: A Type I helicopter has a greater rotor wash than Type II or III helicopters

PG6M1 Mitigation: The agency should ensure adequate dust abatement. The agency should ensure ground personnel are outside of an adequate safety circle.

Action Plan:

- S-61's do not have sand filters and it is necessary to provide dust abatement for FOD. Pilots and managers are aware of this issue and will not land at dirty helispots.
- Safety briefings and brochures will be given to all personnel working around these aircraft. Safety is paramount and landings with personnel within the safety circle will not be performed.

Timeline to Complete: Completed for current Type I contracts.

Cost: $ No cost Anticipated

Applies to: Type I Helicopters

Priority: *Low*

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Serious

Personnel Contractor PC3 HAZARD: Crew Resource Management (CRM) is different in a Type I due to limited visibility and limited site access to pilots.

PC3M1 Mitigation: PIC and SIC will be required to attend the agency crew resource management (CRM) or equivalent training (16 hour version) every contract cycle.

Action Plan:

- Requirement is currently in the contract for Type I helicopters awarded for Standard Category (IA) Items.
- CRM course will be provided at the Host bases prior to becoming "available" for incident missions.

Timeline to Complete: Completed for current Type I contracts.

Cost: $ No cost Anticipated

Applies to: Type I Helicopters

Priority: *Low*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Personnel Contractor PC4 HAZARD: Contractors used for Type I personnel transport in the wildland fire environment may not have extensive experience in the personnel transport mission.

PC4M1 Mitigation: The agency should complete an independent aviation audit of Type 1 operators that perform personnel transport to determine the depth and quality of the operators' background and experience in performing this mission.

Action Plan:

- Washington Office West will develop an implementation plan for auditing Type 1 operators that have been awarded contracts prior to their Mandatory Availability Period.
- This will be part of the "Contract Oversight and Quality Assurance" concept…Item # 7. This will be initiated in FY 2010.

Timeline to Complete: 1 year

Cost: $ 10,000 per contractor

Applies to: Type 1, Type II, and Type III Helicopters

Priority: *Moderate*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Aircraft System A6 HAZARD: Notification of personnel during emergency who do not have helmets with audio for contact.

A6M1 Mitigation: The agency should utilize a personnel notification system such as a public address system, horn or siren to alert personnel of emergency. Activation of the personnel notification system should be possible by the helicopter manager as well as the flight crew.

Action Plan:

- S61's currently on contract have per contract specifications a public address system that the manager can activate.

Timeline to Complete: Completed for current Type I contracts.

Cost: $ No Cost Anticipated

Applies to: Type I Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: High

Aircraft System A1 HAZARD: Due to the size of the interior and door locations, it is more difficult to escape in case of accident or incident.

A1M1 Mitigation: Develop and implement rapid escape procedures.

Action Plan:

- Mitigation Implementation: In the S61's currently on contract there is an emergency exit door in the rear of the cabin; two emergency window exits as well as every window can be considered an emergency exit. These do not include the standard doors that may be used in case of emergency
- Passenger briefing cards have been developed for each aircraft by the contractor to depict the actual configuration of the cabin as well as the seat and restraint configuration
- Passenger shall be briefed using these cards in accordance with FAR Part 135 requirements
- Passenger evacuation drills shall be accomplished with a goal of a 90 second evacuation.

Timeline to Complete: Completed for current Type 1 contracts.

Cost: $ No Cost Anticipated

Applies to: Type I Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Medium

Personnel Contractors PC1 HAZARD: Establishing and documenting the center of gravity and weight and balance calculations are critical steps to support mission planning and implementation.

PC1M1 Mitigation: The vendor will provide the center of gravity and weight and balance limitations for internal cargo maximum weight. All multi-engine aircraft shall perform a weight and balance calculation prior to every takeoff when transporting personnel.

Action Plan:

- S61's currently on contract have Center of Gravity and Weight and Balance programs that will be used with their company provided handheld Personal Digital Assistant (PDA's). Each takeoff and landing will require the calculation and provided to the manager confirmation that the helicopter is within limits.

Timeline to Complete: Completed for current Type 1 contracts.

Cost: $ No Costs Anticipated

Applies to: Type I, Type II and Type III Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Personnel Government PG7 HAZARD: There is an element of complexity resulting from mission switch between water or retardant delivery to personnel delivery.

PG7M1 Mitigation: The helicopter manager shall examine and brief the pilot (s) on the mission profile and planning. The HIP shall emphasize the issues related to mission change, particularly from external load to personnel transport. Utilize the electronic load calculation process for each mission.

Action Plan:

- The Helicopter Managers will apply sound ORM principles. Pilot Inspectors will cover personnel transport in Type I helicopters talking points that will cover external load versus internal loads and passenger operations, crew coordination, mountain flying, confined area operations, pinnacle and ridgeline operations, slopes, and situational awareness.
- Theatre of operations may assist in determining mission profile.

Timeline to Complete: Less than 2 weeks after MAP begins.

Cost: $ No Costs Anticipated

Applies to: Type 1 Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Personnel Government PG4 HAZARD: The load calculation process is more complex for some Type I helicopters used in personnel transport.

PG4M1 Mitigation: Develop an electronic load calculation and incorporate its use in Helicopter Manager and Crewperson training.

Action Plan:

- We currently are capable of using an approved electronic load calculation (performance planning chart) and are in the process of approving the automated helicopter performance planning chart program.
- The use of the electronic load calculation is currently in use. The use of the performance planning chart will need to be approved by the National Office and can be accomplished in under 30 days.

Timeline to Complete: Less than 30 days

Cost: $10,000

Applies to: Type 1, Type II, and Type III Helicopters

Priority: *Low*

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Serious

Personnel Government PG5 HAZARD: A Type I Helicopter has a larger footprint requiring a larger helispot. A longer and wider departure and arrival path is required.

PG5M1 Mitigation: Insure there is an adequate approach and departure standard. Adhere to the Interagency Helicopter Operations Guide (IHOG) standards.

Action Plan:

- Managers will comply with existing standards and will educate agency aviation and operations management or will not perform the mission.
- Helicopter Program Managers will develop a Type 1 helicopter capability and limitations brochure to assist and educate field personnel.

Timeline to Complete: 30 days

Cost: $ 500

Applies to: Type I Helicopters

Priority: *Moderate*

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Serious

Aircraft System A5 HAZARD: Limited visibility exists from inside the cabin which restricts the ability of the Helicopter Manager to assist in identifying external hazards.

A5M1 Mitigation: Utilize at least one observer bubble window on each side of the aircraft closest to exit doors with intercommunication system access capabilities.

Action Plan:

- S61's currently on contract have bubble windows with the exception of 1 in which the FS has agreed to compensate the contractor for installation.

Timeline to Complete: 30 days

Cost: $ 20,000

Applies to: Type I Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Personnel Government PG3 HAZARD: There is a lack of standardization between Helicopter Inspector Pilots (HIPs) regarding pilot evaluation.

PG3M1 Mitigation: The agency should implement a standardized procedure pertaining to evaluation of contractor helicopter pilots.

Action Plan:

- Currently the draft documents are being evaluated by the Inspector Pilot community and will respond back to the WOW with any proposed changes or improvements. After receiving their responses inclusion as an amendment to the existing Helicopter Practical Standards will take less than 30 days.
- See Appendix D & E (page 53 & 59) of the Independent Risk Assessment for Personnel Transport in Type 1 Helicopters.

Timeline to Complete: 30 days

Cost: $ (See PC2M1) Inclusive

Applies to: Type 1 Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Aircraft System A3 HAZARD: Seat restraints, seats and seat attachments for the aircraft are non-standard in their configuration and meets different minimal legacy Federal Aviation Administration (FAA) standards.

A3M1 Mitigation: The agency should require all personnel seats are substantiated to PART 29 requirements.

Action Plan:

- The agency is moving forward in PART 29 substantiation direction.
- We will identify current level of certitude for all S61's currently on contract by a private engineering firm. Estimate less than 30 days.
- Spot check Type II and Type III helicopters while performing CCT to ensure certification of seat requirements are compliant.
- Check Oil industry for the standards they accept for moving passengers.
- New contract language addresses this issue but still needs determination on an acceptable level of substantiation requirement.

Timeline to Complete: Less than 30 days

Cost: $ 10,000 per contractor

Applies to: Type 1, Type II, and Type III Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Personnel Government PG11 HAZARD: There is a need to establish the practical test standard for a Type I pilot check ride for passenger transport.

PG11M1 Mitigation: The agency should determine and implement a change to the interagency practical test standards for pilots of Type1 helicopters performing personnel transport missions. Establish a standardized Safety Briefing/Oral Evaluation for pilots transporting personnel in Type 1 Helicopters.

Action Plan:

- See Appendix D & E (page 53 & 59) of the Independent Risk Assessment for Personnel Transport in Type 1 Helicopters.
- Currently the draft documents are being evaluated by the Inspector Pilot community and will respond back to the WOW with any proposed changes or improvements. After receiving their responses inclusion as an amendment to the existing Helicopter Practical Standards will take less than 30 days.

Timeline to Complete: Less than 30 days

Cost: $ (See PC2M1) Inclusive

Applies to: Type 1 Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Personnel Contractor PC2 HAZARD: Transporting passengers can be an infrequent mission for most Type I Helicopter pilots. In general, pilots are not familiar with changing types during a day. Personnel transport requires a different flying technique than other Type I Helicopter missions.

PC2M1 Mitigation: The agency should work with other agencies to determine and implement a change to the interagency practical test standards for Type 1 personnel transport helicopters.

Action Plan:

- See Appendix D & E (page 53 & 59) of the Independent Risk Assessment for Personnel Transport in Type 1 Helicopters.
- Currently the draft documents are being evaluated by the Inspector Pilot community and will respond back to the WOW with any proposed changes or improvements. After receiving their responses inclusion as an amendment to the existing Helicopter Practical Standards will take less than 30 days.

Timeline to Complete: Less than 30 days

Cost: $2,000

Applies to: Type 1 Helicopters

Priority: *High*

Pre-Mitigation Rating: High **Post-Mitigation Rating**: Medium

Personnel Government PG12 HAZARD: There is a limited ability for crew resource management (CRM) to occur due to the placement of interior walls in all Type I Helicopters.

PG12M2 Mitigation: Exclusive-use Helicopter Managers will be required to attend Crew Resource Management (CRM) training (16-hour version)

Action Plan:

- The new 5109.17 requirement for CRM will be included. Anticipate updated 5109.17 in 2010.

Timeline to Complete: 1 Year to Implement.

Cost: $ 3000 per Manager

Applies to: Type I Helicopters

Priority: *Low*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Personnel Government PG4 HAZARD: The load calculation process is more complex for some Type I helicopters used in personnel transport.

PG4M2 Mitigation: Place the electronic load calculation process on the Interagency Aviation Training web site.

Action Plan:

- Aviation Management Directorate (AMD) will contract to include into the Interagency Aviation Training (IAT) web based system. Can be completed within one year.
- The S-372 Helicopter Manager and S-271 Helicopter Crewmember courses are currently being revised. Both courses will include the new version of Helicopter Load Calculation training curriculum that is already completed. Can be accomplished within one year.

Timeline to Complete: Less than 1 year

Cost: $5,000

Applies to: Type 1, Type II, and Type III Helicopters

Priority: *Low*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: High

Personnel Government PG8 HAZARD: Incident Management Teams (IMT's) may not be fully aware of how to plan for and utilize Type I personnel transport in operations. Some IMT's including NIMO Teams do not staff air operations positions. There is an overall shortage of AOBD's, ASGS's, ATGS's, HLCO's, and Helibase Managers (HEB1/2). There is a lack of general knowledge including risk assessment and hazard mitigation by IMTs

PG8M1 Mitigation: Adjust and develop USFS Pacific Southwest Region S-370 course, Intermediate Air Operations in a nationally adopted course. Suggested attendance is Crew Boss (CRWB) and higher including currently qualified personnel.

Action Plan:

- Development process will begin Winter 2009.

Timeline to Complete: 1 Year.

Cost: $ (See O1M1) Inclusive

Applies to: Type I, Type II and Type III Helicopters

Priority: *Moderate*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Personnel Government PG8 HAZARD: Incident Management Teams (IMT's) may not be fully aware of how to plan for and utilize Type I personnel transport in operations. Some IMT's including NIMO Teams do not staff air operations positions. There is an overall shortage of AOBD's, ASGS's, ATGS's, HLCO's, and Helibase Managers (HEB1/2). There is a lack of general knowledge including risk assessment and hazard mitigation by IMTs

PG8M2 Mitigation: The agency should increase its capacity in aviation management positions by staffing three Type 1 exclusive-use helicopters to train staff in advanced aviation management skills

Action Plan:

- Management should follow the National Helicopter Operations Plan for staffing and qualification goals for Type 1 & 2 helicopter programs. Need positions and funding approval. Also need to add positions to organization charts. Additional positions hired will depend upon ASC and approvals – estimated 1 year to hire.

Timeline to Complete: 1 Year.

Cost: $ 500,000

Applies to: Type I, Type II and Type III Helicopters

Priority: *Moderate*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: High

Personnel Government PG8 HAZARD: Incident Management Teams (IMT's) may not be fully aware of how to plan for and utilize Type I personnel transport in operations. Some IMT's including NIMO Teams do not staff air operations positions. There is an overall shortage of AOBD's, ASGS's, ATGS's, HLCO's, and Helibase Managers (HEB1/2). There is a lack of general knowledge including risk assessment and hazard mitigation by IMTs

PG8M3 Mitigation: Require aviation management staffing on Incident Management Teams including NIMO teams. Staffing should be appropriate for the complexity of incident.

Action Plan:

- Washington Office East Management needs to make the decision to implement aviation positions into these IMTs.

Timeline to Complete: 1 Year.

Cost: $ 20,000

Applies to: Type I, Type II and Type III Helicopters

Priority: *Moderate*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: High

Operations System O1 HAZARD: Incident Management Teams (IMT's) may not be fully aware of how to plan for and utilize Type I personnel transport in operations. Some IMT's including NIMO Teams do not staff air operations positions. There is an overall shortage of AOBD's, ASGS's, ATGS's, HLCO's, and Helibase Managers (HEB1/2). There is a lack of general knowledge including risk assessment and hazard mitigation by IMTs.

O1M1 Mitigation: Adjust and develop USFS Pacific Southwest Region S-370 course, Intermediate Air Operations in a nationally adopted course. Suggested attendance is Crew Boss (CRWB) and higher including currently qualified personnel.

Action Plan:

- Development process will begin Winter 2009
- The inclusion of aviation management positions will benefit theatre of operations.

Timeline to Complete: 1 Year.

Cost: $ 20,000

Applies to: Type I, Type II and Type III Helicopters

Priority: *Moderate*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Personnel Government PG9 HAZARD: There is an agency need for an adequate number of Aircraft Maintenance Inspectors (AMIs) that have specialized training and experience with the Type I Helicopters.

PG9M1 Mitigation: The agency should implement the optimal number of AMI positions and skills needed based on workload defined by the program of work.

Action Plan:

- Per Forest Service defined actions in response to OIG Safety Audit recommendations, the Forest Service has identified an additional 7 full time positions and a Technical Services contract needed to provide the airworthiness assurance described within the plan at an estimated cost of $1.75 million. Additional AMIs hired will depend upon ASC and approvals – estimated 1 year to hire.
- Washington Office East has been tasked with development and implementation and organizational inclusion of these positions
- In the interim of hiring addition AMIs, the Contract Compliance Teams (CCTs) will provide oversight throughout the 2009 fire season.

Timeline to Complete: 1 Year.

Cost: $ 1,750,000

Applies to: Type I Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Personnel Government PG2 HAZARD: Aircraft Maintenance Inspectors (AMI) is less familiar with personnel transport cabin requirements for a Type I Helicopter than other types of helicopters.

PG2M1 Mitigation: The agency should accelerate training and mentoring of aircraft maintenance inspectors.

Action Plan:

- Maintenance Inspectors are currently designing training and mentoring process which will be implemented in 1 year. This will be based on findings from the contract compliance inspections implemented in fire season 2009.

Timeline to Complete: 1 Year.

Cost: $ 100,000

Applies to: Type I Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Serious

Personnel Government PG10 HAZARD: There is an agency need for adequate number of Helicopter Inspector Pilots (HIPs) that have specialized training and experience with the Type I helicopters.

PG10M1 Mitigation: The agency should identify and implement the number of HIPs and skills needed based on workload defined by the program of work.

Action Plan:

- The Regional Fire Directors have tasked Washington Office East to identify inspector needs for maintenance and pilot positions. Those findings will be presented to the Regional Fire Directors and acted on in the near future. Current estimated numbers from the National Helicopter Program Manager: we should be at 13 and there are currently 7. Additional HIPs hired will depend upon ASC and approvals – estimated 1 year to hire
- In the interim of hiring addition HIPs, the Contract Compliance Teams (CCTs) will provide oversight throughout the 2009 fire season.

Timeline to Complete: 1 year

Cost: $ 900,000

Applies to: Type 1, Type II, and Type III Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Medium

Operation System O2 HAZARD: The agency lacks a process to evaluate helicopters used in personnel transport missions. Budget constraints limit the ability of the agency to select optimal aircraft and appropriate support staff for the passenger transport mission.

O2M1 Mitigation: The agency should establish and implement an evaluations process for platforms for Type 1 personnel transport platforms.

Action Plan:

- It is the desire of the Washington Office West to have a Helicopter Screening and Evaluation Board (HSEB) similar to the Smokejumper Screening and Evaluation Board (SASEB) If approved this could be initiated in 2009 and start evaluations in 2010.
- See appendix H (page 79) of the Independent Risk Assessment for Personnel Transport in Type 1 Helicopters development process will begin Winter 2009.

Timeline to Complete: 1 Year.

Cost: $ 100,000 per year

Applies to: Type I, Type II and Type III Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Medium

Operation System O2 HAZARD: The agency lacks a process to evaluate helicopters used in personnel transport missions. Budget constraints limit the ability of the agency to select optimal aircraft and appropriate support staff for the passenger transport mission.

O2M2 Mitigation: Establish and implement required program support personnel positions.

Action Plan:

- Management should follow the National Helicopter Operations Plan for staffing and qualification goals for Type 1 & 2 helicopter programs. Need positions and funding approval.
- Need to add positions to organization charts. Additional positions hired will depend upon ASC and approvals – estimated 1 year to hire.

Timeline to Complete: 1 Year.

Cost: $ (See PG8M2) Inclusive

Applies to: Type I, Type II and Type III Helicopters

Priority: *High*

Pre-Mitigation Rating: Extreme **Post-Mitigation Rating**: Medium

Operation System O2 HAZARD: The agency lacks a process to evaluate helicopters used in personnel transport missions. Budget constraints limit the ability of the agency to select optimal aircraft and appropriate support staff for the passenger transport mission.

O2M3 Mitigation: Establish and request an adequate budget to implement the requested program.

Action Plan:

- Once Washington Office East Management agrees to implement mitigation measures adequate funding will be requested.

Timeline to Complete: 1 Year.

Cost: $ A Hell of a lot

Applies to: Type I, Type II and Type III Helicopters

Priority: *High*